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1984 Buying Forecast

paperboard packaging

JANUARY 1984 VOLUME 69, NO. 1

On the Cover:

Our cover story is the yearly Buying Forecast (starts on page 24). It appears the year ahead will be lucrative, though the crystal ball goes murky beyond 1984. (Cover design by Mary Hessing. Photography by Steve Senenfelder.)

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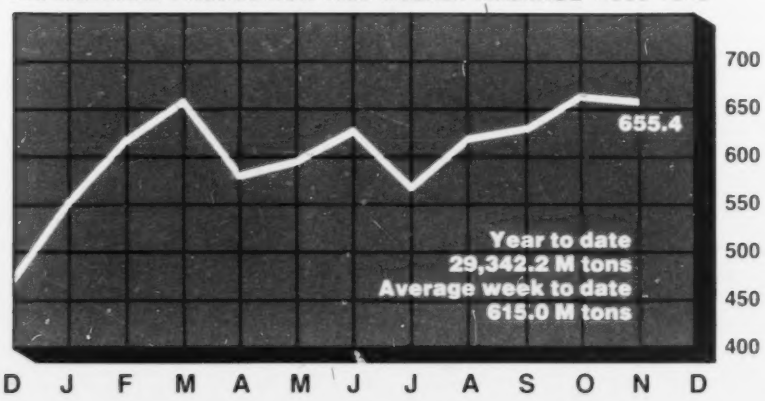
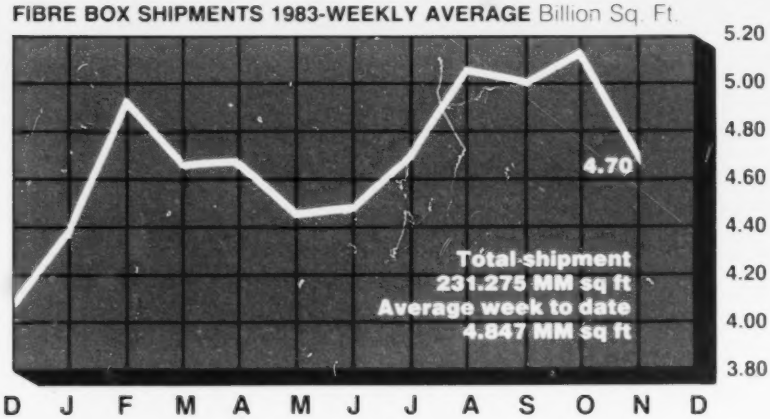
INDUSTRY **STATISTICS**

PAPERBOARD PRODUCTION 1983-WEEKLY AVERAGE 1,000 Tons



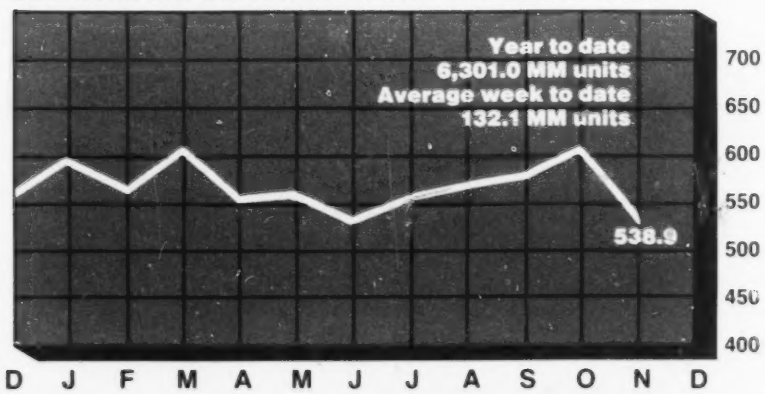
PAPERBOARD MILL OPERATIONS:
With a single month of 1983 remaining, total average-week paperboard output was 8.9% above '82, compared with a drop last year of 7.9% from '81, a rise of 3% in '81 from '80, and a drop of 1.9% in '80 from '79. Average-week tonnage at November-end had not yet regained the level of 1981. The '83 record includes an advance of 9.6% from '82 for containerboards and 7.8% for boxboard grades. The former materials were enjoying a record-breaking surge in recent-months' container shipments, and even boxboards responded with atypical vigor to improving national business.

FIBRE BOX SHIPMENTS 1983-WEEKLY AVERAGE Billion Sq. Ft.



PAPERBOARD-TYPE PRODUCTION:
In November, 2099.4 M tons of containerboards (up 13.1% from '81) and 709.3 M of boxboards (up 5.7%) combines for an 11.1% overall increase to 2808.7 M short tons, as projected from the American Paper Institute's "production by furnish" data. One effect of this late-year expansion is that the containerboard/boxboard output ratio moves closer to 3-to-1 from the long-traditional 2-to-1, despite the strong surge in boxboard tonnage. The latter, however, is likely to be simple recovery from a recessive year, since competition from alternate packagings is not receding.

COMPOSITE CAN OUTPUT 1983-WEEKLY AVERAGE Million Units



RIGID PAPER BOXES:
Through the first 11 months of 1983, set-up box producers reported an increase of some 10% from last year's grand total billings, with rising margins as 1983 business was well-sustained in late months. All eight of the National Paperbox & Packaging area divisions are above last year's level, with marked improvement in the Midwest industrial sectors—which had the furthest to go from doldrums. A bit of good news is that average price per shipped ton has improved somewhat beyond the present degree of dollar inflation. But tonnage continues down.

For more information on Specialty Equipment Co., Circle No. 148 on Reader Inquiry Card→

1984 Buying Forecast

This will undoubtedly be the best business year the paperboard converting industry will have experienced in a long time.

No matter how hard one looks for weak spots in the nation's economic foundation, there are very few, if any, that have to be worried about this year. And with packaging so closely tied to the ebbs and flows of the economy, this portends good news for suppliers and boxmakers alike in an election year.

It's important to remember, however, that after Nov. 6 all bets for continued prosperity into 1985 and beyond might have to be called off. Naturally, only time will tell. In the mean time, the economic picture looks extremely bright indeed. A year ago the big concern was high interest rates and while the prime rate (currently at 11%) might edge up a little in the next six months or so, it has remained pretty stable the past six months and really can't be considered as threatening as it once was. It also has to be remembered that when something (like historically high interest rates) has been around for a long time, businesses have a tendency to get used to it, whether they like to admit it or not.

The wide array of positive economic signs includes the fact that the wholesale inflation rate has reached its lowest annual mark in 20 years and that unemployment keeps falling. It could be as low as 7.5% in another few months. Other encouraging notes include rising retail sales, more overtime at our nation's factories and housing starts almost 50% greater than 1982. Of course, when one realizes that 1983 figures are being compared to a (deep) recession year, that takes off some of the gloss. Finally, and probably most importantly, personal incomes, after taxes, are growing faster than prices. This means that wallets and purses will be opening up with much greater frequency in the months ahead, and this is directly attributable to the best Christmas selling season in four years.

Of course, as is well known by now, if businesses aren't willing to spend for capital goods, the economy withers like grapes on a vine. There's good news to report here, too. According to the Economic Unit of *U.S. News and World Report*, this year's pickup will amount to "possibly 10%—or 6% after adjustment for inflation." No boom, but when one thinks about it, a boom could do more damage (higher inflation) than good. Moderation will be the key to long-term economic stability, so when the Commerce Department or Labor Department comes out with figures that aren't always on a downward trend, it does not automatically mean it's time to panic.

The general business community will raise its investment in plant and equipment by 5-8%, after inflation, this year, compared to a 1-2% decline last year.

The '84 Forecast on U.S. corrugated, folding carton and rigid box manufacturers was written by Mark Arzoumanian, editor, Paperboard Packaging; Fred Sharring, senior editor, Paperboard Packaging; and Norm Baldwin, executive director, NP&PA.

Business upturn

"The best is yet to come," says the president of one independent box plant. "My customers are cautiously optimistic and we're planning for some major capital investments to take advantage of the upturn in business."

Corrugated and Solid Fibre Boxes (SIC 2653): Trends and Projections 1972-84

(in millions of dollars except as noted)

Item	1972	1977	1979	1981	1982[1]	1983[2]	Compound annual rate of growth 1972-83	1984[3]	Percent change 1983-84
Industry data									
Value of shipments[4]	4,308.8	7,351.1	8,975.9	10,760.3	11,065.0	11,065.0	9.0		
Value of shipments (1972 $)	4,308.8	4,619.0	5,094.8	5,133.7	5,148.0	5,148.0	1.6	5,380.0	4.5
Total employment (000)	107.9	101.5	103.7	97.3	93.9	93.9	−1.3	95.9	2.1
Production workers (000)	80.6	73.5	75.5	69.5	67.4	67.4	−1.6	69.2	2.6
Average hourly earnings of production workers ($)	3.88	5.92	6.91	8.69	9.13	9.13	8.12		
Capital expenditures	101.5	243.3	303.0						
Product data									
Value of shipments[5]	4,196.9	7,182.8	8,686.9	10,495.9	10,087.0	10,793.0	9.0		
Value of shipments (1972 $)[5]	4,196.9	4,499.1	4,962.5	5,007.6	4,782.0	5,021.0	1.6	5,247.0	4.5
Product price index (1972=100)	100.0	146.4	173.1	209.6	210.8	215.0	7.2		
Quantity shipped (unit of measure)	211.9	227.2	250.6	246.2	235.2	247.0	1.4	258.0	4.5
Trade									
Value of exports	8.3	34.0	49.0	64.4	68.4	72.5	21.8	77.6	7.0
Export/shipments ratio	0.002	0.005	0.006	0.006	0.007	0.006	10.616		

[1] Estimated except for product price index, exports, and imports.
[2] Estimated.
[3] Forecast.
[4] Value of all products and service sold by industry SIC 2653.
[5] Value of shipments of corrugated and solid fiber box products produced by all industries.
[6] New supply is the sum of product shipments plus imports.

Source: Bureau of the Census and Bureau of Industrial Economics. Estimates and forecasts by the Bureau of Industrial Economics.

A recent survey conducted by the National Association of Business Economists resulted in some noteworthy conclusions. Among them, 41% of these economists believe the next business recession will begin as soon as next year, while 31% believe it will start in 1986 and 19% in 1987 or later. Also, 41% believe the prime bank lending rate will be moderately higher this year. One can conclude that this year could very well be the peak business year of the 1980s. The remaining six years could be a real economic roller coaster if something isn't done about the $200 billion budget deficit that to date the Reagan Administration has not been able to put a lid on, never mind reduce. President Reagan won't do anything until after Election Day, so right now things are going to remain in limbo. Cutting taxes has obviously not been a cure and government spending keeps going up and up. Giving the deficit dilemma some historical perspective, it must be pointed out that federal outlays, as a percentage of GNP, have been rising at an annual rate of 1.8% since 1970 and since 1979 have gone up to 4.6%. Deficits didn't start with Reagan, and the passage of the Congressional Budget and Impoundment Control Act of 1974, which severely limited the president's power to control spending, certainly doesn't help matters.

Something has to be done about this deficit. All a tax increase will do is finance more government spending. The key question remains whether the government's share of the economy should be allowed to become larger than it already is. To think that we, as a nation, can continue to live with this deficit hovering over our collective heads is utterly ridiculous.

In conclusion, if the paperboard converting industry can't make money this year, something is fundamentally wrong. Growth will be steady throughout the year and that means that *everyone* will benefit, to one degree or another. Remember, though: business rarely walks through the door, and only those who are continuously aggressive and innovative will be able to prevent it from walking out the door in 1985 and beyond.

Corrugated Boxmakers All Agree: Sales Will Be Up

Industry saw a 5% year-to-year gain in real growth, largest in six years.

After talking to dozens of box plant executives and key suppliers to the corrugated container industry, the conclusion can be summed up in a song from the Broadway musical "Gypsy": "Everything's Coming Up Roses."

"I'm very enthusiastic about business," says the general manager of an East Coast box plant. "It was slow during the (past) summer but it has been building up the past two to three months. Our phones are ringing heavy and I expect things to really take off now."

Probably the best example of a company committing itself to the future of this industry is found in Mead Containers. By the end of this year it is scheduled to complete a $23 million capital investment program to improve technology and cost-effectiveness at two corrugated container plants. The St. Joseph, Mo., plant and Mead's Atlanta/Covington, Ga., facility will be expanded to accommodate new corrugating machines and material handling and converting equipment.

However, the other side of the coin cannot be ignored: plant shutdowns and mergers. The latter trend manifests itself in Canada's MacMillan Bathurst, which really amounted to a logical pooling of resources. Unfortunately—or perhaps for overall industry profitability, fortunately—the trend toward consolidation will continue for another 15 to 20 years as more and more integrateds realize that profit must be king—no ifs, ands or buts.

Record highs

Although this was written before the end of 1983, based on reports from the Fibre Box Association during October and November, there is a very good chance that a new record of 252 billion sq ft will have been set, beating the previous high of 250.643 set in 1979. *Paperboard Packaging* estimates a 1983 industry sales volume of $12.5 billion (in today's dollars).

Norma Pace, senior vice president, American Paper Institute, speaking at the Association of Independent Corrugated Converters' Fall Meeting, gave a very upbeat report, concluding that '84 is going to be a "great year." She noted that the Federal Reserve will "stay on a neutral course, keeping interest rates at moderate levels" and that this year box shipments will advance 6.3%. She also predicted 270 billion sq ft of board will be produced this year.

According to the U.S. Department of Commerce's Office of Basic Industries, current major end-user markets for corrugated boxes include stone, clay and glass products, electrical machinery and equipment and lumber and wood products. Principal nondurable end-user markets include food and beverages, paper and allied products, rubber and plastics, and chemicals and allied products.

Continuing technological developments in the corrugated container industry include the steady increase of computers and computer software programs, a long-overdue trend; the improvement of color printing techniques, especially with regards to point-of-purchase displays; a steady rise in the use of preprinted linerboard; the improvement of in-plant material handling systems; and employment of better moisture control in containerboard raw materials to increase productivity.

Without a doubt, this will be a banner year for the corrugated container industry in the United States. In Europe, the situation is more of a mixed bag; certain countries are just now starting to see their economies pick up (with a corresponding rise in container production) while others are still mired in the throes of deep recession. Box plants throughout the world now realize that staying lean and competitive will not only mean survival but, if they play their cards right, a bigger bottom line for this year and beyond. The key will be passing valued-added costs to the customer, who for too long has considered an RSC to be this industry's only commodity. Such thinking has been drastically altered with the introduction of greatly improved graphics, printing materials and finishing equipment.

All Major Equipment figures in this forecast are computer-tabulated and based on responses to questionnaires sent to box plants in compiling the Fall 1983 Official Container Directory.

Total United States

Major Equipment

Corrugating plants	612
Sheet plants	713
Corrugators	655
Independent single facers	139
Letterpress printer-slotters	2121
Flexo printer-slotters	787
Flexo folder-gluers	1150
Folder-gluers	627
Infold gluers	75
Tapers & folder tapers	2046
Stitchers & folder stitchers	1479
Diecutters, platen jaw	646
Diecutters, flat bed reciprocating	470
Diecutter stations, rotary	750
Wax impregnators, corr. coaters	385
Curtain coaters	218
Laminators	495
Unitizers & load strappers	1148
Bundle tyers	1720
Computers	588

Estimated Expenditures

Materials

Corrugating adhesives	$111,130,240
Printing inks	90,810,720
Waxes & coatings	98,142,720
Adhesives, synth. resins	16,573,440
Jointing tapes	26,457,600
Stitch wire & staples	6,789,120

Supplies

Printing plates & dies	49,786,880
Cutting rule & dies	36,774,400
Pallet materials	30,151,680
Twine	5,291,520
Strapping: steel & plastic	21,166,080
Baling	2,296,320
Oil & lubricants	10,583,040
Maintenance	27,156,480

South Atlantic

Major Equipment

Corrugating plants	95
Sheet plants	83
Corrugators	99
Independent single facers	13
Letterpress printer-slotters	274
Flexo printer-slotters	138
Flexo folder-gluers	169
Folder-gluers	108
Infold gluers	3
Tapers & folder tapers	268
Stitchers & folder stitchers	201
Diecutters, platen jaw	52
Diecutters, flat bed reciprocating	57
Diecutter stations, rotary	104
Wax impregnators, corr. coaters	76
Curtain coaters	32
Laminators	44
Unitizers & load strappers	162
Bundle tyers	204
Computers	77

Estimated Expenditures

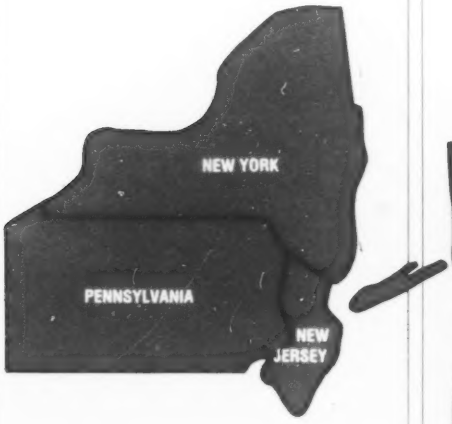
Materials

Corrugating adhesives	$17,096,664
Printing inks	13,372,559
Waxes & coatings	16,980,787
Adhesives, synth. resins	2,338,253
Jointing tapes	3,618,202
Stitch wire & staples	1,004,390

Supplies

Printing plates & dies	8,491,226
Cutting rule & dies	3,817,112
Pallet materials	4,638,566
Twine	655,949
Strapping: steel & plastic	3,052,109
Baling	353,234
Oil & lubricants	1,628,091
Maintenance	4,178,304

Middle Atlantic



Major Equipment

Corrugating plants	118
Sheet plants	132
Corrugators	127
Independent single facers	45
Letterpress printer-slotters	429
Flexo printer-slotters	139
Flexo folder-gluers	201
Folder-gluers	113
Infold gluers	10
Tapers & folder tapers	391
Stitchers & folder stitchers	281
Diecutters, platen jaw	107
Diecutters, flat bed reciprocating	99
Diecutter stations, rotary	123
Wax impregnators, corr. coaters	78
Curtain coaters	23
Laminators	98
Unitizers & load strappers	187
Bundle tyers	283
Computers	100

Estimated Expenditures

Materials

Corrugating adhesives	$20,836,920
Printing inks	17,218,000
Waxes & coatings	13,095,014
Adhesives, synth. resins	3,055,104
Jointing tapes	4,990,003
Stitch wire & staples	1,283,942

Supplies

Printing plates & dies	8,657,334
Cutting rule & dies	7,393,776
Pallet materials	5,652,941
Twine	862,618
Strapping: steel & plastic	3,754,982
Baling	430,510
Oil & lubricants	1,983,821
Maintenance	5,091,840

New England

Major Equipment

Corrugating plants	35
Sheet plants	49
Corrugators	39
Independent single facers	14
Letterpress printer-slotters	140
Flexo printer-slotters	45
Flexo folder-gluers	57
Folder-gluers	28
Infold gluers	1
Tapers & folder tapers	152
Stitchers & folder stitchers	116
Diecutters, platen jaw	46
Diecutters, flat bed reciprocating	33
Diecutter stations, rotary	32
Wax impregnators, corr. coaters	21
Curtain coaters	4
Laminators	38
Unitizers & load strappers	67
Bundle tyers	107
Computers	34

Estimated Expenditures

Materials

Corrugating adhesives	$7,123,418
Printing inks	5,836,230
Waxes & coatings	4,604,621
Adhesives, synth. resins	1,013,088
Jointing tapes	1,938,893
Stitch wire & staples	506,688

Supplies

Printing plates & dies	3,125,408
Cutting rule & dies	2,344,368
Pallet materials	1,931,904
Twine	347,443
Strapping: steel & plastic	2,374,195
Baling	147,164
Oil & lubricants	678,413
Maintenance	1,740,710

East North Central

Major Equipment

Corrugating plants	152
Sheet plants	222
Corrugators	158
Independent single facers	33
Letterpress printer-slotters	582
Flexo printer-slotters	181
Flexo folder-gluers	285
Folder-gluers	152
Infold gluers	21
Tapers & folder tapers	577
Stitchers & folder stitchers	422
Diecutters, platen jaw	193
Deicutters, flat bed reciprocating	99
Diecutter stations, rotary	197
Wax impregnators, corr. coaters	117
Curtain coaters	43
Laminators	150
Unitizers & load strappers	314
Bundle tyers	449
Computers	149

Estimated Expenditures

Materials

Corrugating adhesives	$29,029,312
Printing inks	24,373,949
Waxes & coatings	22,161,484
Adhesives, synth. resins	4,543,718
Jointing tapes	7,732,608
Stitch wire & staples	1,996,800

Supplies

Printing plates & dies	12,280,153
Cutting rule & dies	10,008,648
Pallet materials	7,876,378
Twine	1,431,706
Strapping: steel & plastic	6,309,894
Baling	600,038
Oil & lubricants	2,764,570
Maintenance	7,093,632

West North Central

Major Equipment

Corrugating plants	49
Sheet plants	51
Corrugators	51
Independent single facers	10
Letterpress printer-slotters	162
Flexo printer-slotters	71
Flexo folder-gluers	81
Folder-gluers	54
Infold gluers	21
Tapers & folder tapers	170
Stitchers & folder stitchers	98
Diecutters, platen jaw	70
Diecutters, flat bed reciprocating	46
Diecutter stations, rotary	77
Wax impregnators, corr. coaters	43
Curtain coaters	33
Laminators	38
Unitizers & load strappers	107
Bundle tyers	149
Computers	50

Estimated Expenditures

Materials

Corrugating adhesives	$6,411,538
Printing inks	4,718,314
Waxes & coatings	7,338,240
Adhesives, synth. resins	969,828
Jointing tapes	1,630,387
Stitch wire & staples	330,470

Supplies

Printing plates & dies	2,406,061
Cutting rule & dies	2,374,424
Pallet materials	1,739,213
Twine	340,454
Strapping: steel & plastic	1,365,512
Baling	132,488
Oil & lubricants	610,522
Maintenance	1,566,490

East South Central

Major Equipment

Corrugating plants	36
Sheet plants	41
Corrugators	40
Independent single facers	2
Letterpress printer-slotters	142
Flexo printer-slotters	48
Flexo folder-gluers	62
Folder-gluers	45
Infold gluers	6
Tapers & folder tapers	131
Stitchers & folder stitchers	87
Diecutters, platen jaw	38
Diecutters, flat bed reciprocating	20
Diecutter stations, rotary	51
Wax impregnators, corr. coaters	26
Curtain coaters	18
Laminators	28
Unitizers & load strappers	73
Bundle tyers	79
Computers	36

Estimated Expenditures

Materials

Corrugating adhesives	$6,945,640
Printing inks	5,838,653
Waxes & coatings	6,331,853
Adhesives, synth. resins	1,076,275
Jointing tapes	1,655,347
Stitch wire & staples	420,326

Supplies

Printing plates & dies	3,180,320
Cutting rule & dies	2,133,976
Pallet materials	1,883,981
Twine	259,584
Strapping: steel & plastic	1,445,683
Baling	143,470
Oil & lubricants	661,440
Maintenance	1,697,280

West South Central

Major Equipment

Corrugating plants	49
Sheet plants	53
Corrugators	51
Independent single facers	10
Letterpress printer-slotters	163
Flexo printer-slotters	72
Flexo folder-gluers	91
Folder-gluers	44
Infold gluers	11
Tapers & folder tapers	148
Stitchers & folder stitchers	110
Diecutters, platen jaw	33
Diecutters, flat bed reciprocating	28
Diecutter stations, rotary	74
Wax impregnators, corr. coaters	41
Curtain coaters	37
Laminators	38
Unitizers & load strappers	101
Bundle tyers	140
Computers	52

Estimated Expenditures

Materials

Corrugating adhesives	$9,439,144
Printing inks	7,312,105
Waxes & coatings	11,943,859
Adhesives, synth. resins	1,287,936
Jointing tapes	2,099,635
Stitch wire & staples	588,106

Supplies

Printing plates & dies	3,954,579
Cutting rule & dies	2,765,152
Pallet materials	2,560,896
Twine	452,275
Strapping: steel & plastic	2,349,235
Baling	194,688
Oil & lubricants	898,860
Maintenance	2,306,304

Mountain

Major Equipment

Corrugating plants	11
Sheet plants	17
Corrugators	10
Independent single facers	2
Letterpress printer-slotters	34
Flexo printer-slotters	17
Flexo folder-gluers	24
Folder-gluers	16
Infold gluers	1
Tapers & folder tapers	37
Stitchers & folder stitchers	30
Diecutters, platen jaw	11
Diecutters, flat bed reciprocating	10
Diecutter stations, rotary	13
Wax impregnators, corr. coaters	4
Curtain coaters	7
Laminators	12
Unitizers & load strappers	20
Bundle tyers	44
Computers	14

Estimated Expenditures

Materials

Corrugating adhesives	$1,423,760
Printing inks	1,676,875
Waxes & coatings	826,618
Adhesives, synth. resins	391,872
Jointing tapes	469,348
Stitch wire & staples	115,814

Supplies

Printing plates & dies	1,189,302
Cutting rule & dies	837,590
Pallet materials	386,381
Twine	132,787
Strapping: steel & plastic	280,550
Baling	28,954
Oil & lubricants	135,683
Maintenance	347,443

Pacific

Major Equipment

Corrugating plants	67
Sheet plants	65
Corrugators	80
Independent single facers	10
Letterpress printer-slotters	195
Flexo printer-slotters	76
Flexo folder-gluers	180
Folder-gluers	67
Infold gluers	1
Tapers & folder tapers	172
Stitchers & folder stitchers	137
Diecutters, platen jaw	96
Diecutters, flat bed reciprocating	78
Diecutter stations, rotary	79
Wax impregnators, corr. coaters	79
Curtain coaters	21
Laminators	49
Unitizers & load strappers	117
Bundle tyers	265
Computers	76

Estimated Expenditures

Materials

Corrugating adhesives	$12,822,305
Printing inks	10,599,388
Waxes & coatings	14,533,708
Adhesives, synth. resins	1,932,902
Jointing tapes	2,322,278
Stitch wire & staples	588,058

Supplies

Printing plates & dies	6,776,141
Cutting rule & dies	4,282,980
Pallet materials	3,478,426
Twine	806,707
Strapping: steel & plastic	2,088,653
Baling	264,576
Oil & lubricants	1,221,043
Maintenance	3,132,979

Folding Carton Industry Faces Tough Competition

The key to growth is in exploiting new market areas made available as a result of changing social trends.

What growth opportunities can be looked forward to by a U.S. folding carton industry that must look back on a decades-long drop in per-person use of that product?

To judge from some cheery predictions, a steady and vigorous expansion is to be expected over the near future, and thereafter. Such forecasts rarely state a plausible basis for this belief. To judge from the stark facts of annual production tonnage, any growth potential must lie in holding the present share of existing uses as well as possible, while identifying and entering new applications.

It may well be said that this has always been the case. Indeed it has, but the case has not always included such a wide and successful array of alternate, new-fangled packagings, presented and promoted by such an alert and vigorously innovative array of producers.

However it may be sliced and scrutinized, the fact remains that total U.S. shipments of folding cartons today are below the tonnage of 10 years ago, while population has of course risen. The effect and extent of this is that in the year just past, the average American called for precisely 10% less folding carton product than in 1973.

It can't take many more years of such an attrition level to transform the whole posture and prominence of folding cartons. Already, in only the latest half of that same decade, nearly 10% of the industry's plants have gone out of business—for reasons far removed from the normal perception of antiquated, marginal business.

It may be that a significant further number of the more-precariously situated carton operations will also go under before some sort of equilibrium is reached in demand/supply. It is sophistry to say that this point will come sooner if effective steps are taken. The

question clearly is—what steps are those?

Price is not the answer, as already demonstrated. The value of shipped folding cartons went up 115% in the aforesaid decade just past, according to their producers' announcement, which in this case becomes more in the nature of an admission. Yet the folding fold-up has continued.

It seems logical, then, that stabilizing the industry's fortunes might better lie in seeking new package outlets, rather than in grim struggle to contend for existing uses. The latter have been under attack for years by plastics and various other alternative applications. It would seem that where these carton markets can be lost, they have largely been lost already. On the other hand, shifts and evolutions in social patterns are calling for species of contents and packages never before demanded in any great volume.

These changes include the expanding number of two-income households, and of single-person households, increasing affluence among the 90% employed, greater variety of leisure diversions, more-widespread concern with personal health, and an aging population, among other factors.

Convenience eating

As prominent as any among these evolutions is our national eating habits. Foodstuffs, in one form or another, currently claim more than 50% of all packagings produced on carton converting equipment.

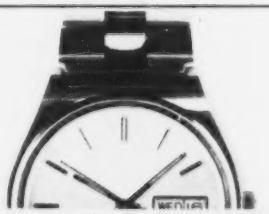
The need for single-portion or other small packages offers a fertile field for carton innovations—by a fraternity that has proved itself highly receptive. The 1980 Census showed an increase in single-person home occupancy of more than 60% over '70, along with a lesser but still significant rise in two-person homes, and in husbands/wives on work schedules of different times. A good part of the latter have at-home children who require nourishing but quickly prepared meals.

Foodstuffs, in one form or another, currently claim more than 50% of all packagings produced on carton converting equipment.

Two major selling points for small-portion units are that a greater variety of foods can be purchased to suit personal tastes, and that the waste-potential of larger quantities is reduced. For an example, senior citizens on budgeted incomes are likely to accept the small additional unit cost for two single-serving packages, or a single two-serving purchase, rather than eat alternate meals of fresh foods and leftovers from one "economy size" box.

Even in the younger sector, where cost may be a less immediate problem, undue waste remains objectionable to most Americans, yet the time taken for assembling and contriving a meal from leftovers defeats the purpose of the single-service food.

In addition to the growing at-home demand for individual servings, the "eating out" syndrome is an expanding outlet for similarly small containers. Market



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researchers report that over the past 10-odd years the percentage of food that is purchased for home preparation has fallen from 85 to 60 percent of the total. In fact, this decline has posed a formidable financial problem for supermarkets geared to the previous volume of sales. Their loss is the cartons' gain.

These two outlets, then—the home-use retail carton and the simple fast-food convenience container—afford two distinct opportunities in carton conversion. The first lends itself to competitive graphics, box design and other traditional factors of visual appeal. The second adopts to no-nonsense conversion into basic hamburger trays, french-fry cups and related high-volume packagings that demand little or no time on printing, embossing or other decorative plant equipment.

A further advantage, here, is that the contents' appeal is to a great extent one of the quantity, rather than of alluring package design. This tends to moderate the need for primary concern with box sophistication, and also to permit use of less expensive boards. When the ton-cost differential of beloved solid bleached sulfate board becomes 60% greater than simple white-lined recycled sheet, the boxmaker's affection is happy to defer to his finances. This, in turn, advances his competitivity against the alternate packagings.

Plastics tailing off

Plastics indeed have entered the arena, but evidences appear that public fascination with those materials is wearing off, and in fact is being replaced by a certain resentment. Professional supermarket publications have remarked that the plastic carryout bag has been discontinued by many stores, because of low popularity, that the molded-foam egg carton is seeing a comeback by the molded pulp and compartmented paperboards, and that the plastic dairy-product containers are losing once-gained ground to waterproofed paperboard.

Among findings from consumer interviews are that plastics have been found irritably difficult to dispose of, and that the householder who is stunned by the preposterous current price of plastic garbage bags suddenly conjectures what the cost of those grocery tote-outs is probably adding to her food bill. Furthermore, a growing segment of the perceiving public reports that throwaway-use of petrochemical derivatives is a "pet peeve"—when renewable paper is available. Those views can be an advantage to the cartonmaker.

Elsewhere among the "trend" advantages is that of convenience packaging for home preparation. The ovenable paperboards and the retort pouches, for examples, are no longer latest concepts, but they remain potent prospects for growth in our evolving social scene.

Both of the major expanding population groups—the active young businesspeople and the senior citizens—incline to avoid giving overmuch attention to such distractions as cooking and dishwashing. The former grudge the

(continued on page 41)

Folding Paperboard Boxes (SIC 2651): Trends and Projections 1972-83

(in millions of dollars except as noted)

Item	1972	1977	1979	1981	1982[1]	1983[2]	Compound annual rate of growth 1972-83	1984[3]	Percent Change 1983-84
Industry data									
Value of shipments[4]	1,487.0	2,579.0	2,950.0	3,556.8	3,848.3	3,983.0	9.4		
Value of shipments (1972 $)[4]	1,487.0	1,553.9	1,617.9	1,652.0	1,623.9	1,648.0	0.9	1,681.0	
Total employment (000)	45.3	44.7	45.0	44.3	42.4	43.0	−0.5	44.0	
Production workers (000)	36.5	35.8	36.1	35.5	33.8	34.3	−0.6	35.1	
Average hourly earnings of production workers ($)	3.90	5.71	6.40	7.50	8.12	8.86	7.76		2.0 2.3
Capital expenditures	37.4	89.8	76.8	100.9					2.2
Product data									
Value of shipments[5]	1,372.1	2,393.4	2,797.6	3,415.0	3,695.0	3,824.0	9.8		
Value of shipments (1972 $)[5]	1,372.1	1,433.8	1,492.9	1,598.0	1,571.0	1,595.0	1.4	1,627.0	2.0
Product price index (1972=100)	100.0	127.4	132.9	213.7	234.8	239.5	8.3		
Quantity shipped (1000 short tons)	2,525.0	2,639	2,748	2,652.0	2,607.0	2,646.0	0.4	2,700.0	2.0
Trade									
Value of exports	5.9	13.0	20.6	26.4	27.8	29.5	15.8	32.5	10.2
Value of imports	5.0	10.0	14.8	17.7	15.0	16.5	11.5	17.5	6.1
Export/shipments ratio	0.004	0.005	0.007	0.008	0.008	0.009	6.945		
Import/new supply ratio[6]	0.004	0.001	0.005	0.005	0.004	0.005			

[1] Estimated except for product price index, exports, and imports.
[2] Estimated.
[3] Forecast.
[4] Value of all products and services sold by industry SIC 2651.
[5] Value of shipments of folding paperboard box.
[6] New supply is the sum of product shipments plus imports.

Source: Bureau of the Census and Bureau of Industrial Economics. Estimates and forecasts by the Bureau of Industrial Economics.

Total United States

Major Equipment

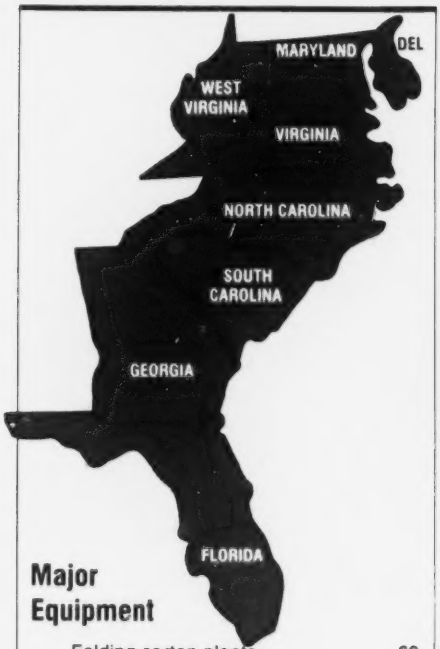
Folding carton plants	562
Cutters & creasers	2401
Letterpress printing presses	752
Offset printing presses	1977
Offset: up to 3 colors	300
Offset: over 3 colors	368
Offset: up to 60"	420
Offset: over 60"	140
Dry offset or letterset	104
Flexographic printing presses	218
Gravure printing presses	132
Gluers, timed	773
Gluers, untimed	1112
Waxers & waxing attachments	330
Laminators	128
Sheet cutters, guillotine	471
Sheeters, web fed	237
Corr. boxmaking equipment	57
Case sealers	265
Computers	145

Estimated Expenditures

Specialty papers	$65,098,800
Ink	127,561,200
Waxes & coatings	21,294,000
Corrugated containers	76,050,000
Die materials	24,843,000
Press plates, print supplies	114,987,600
Adhesives	28,087,800
Embossing foils	19,063,200
Tapes	4,461,600
Maintenance materials	51,004,200

For more information on MHI Corrugating Machinery, Co., Circle No. 135 on Reader Inquiry Card

South Atlantic



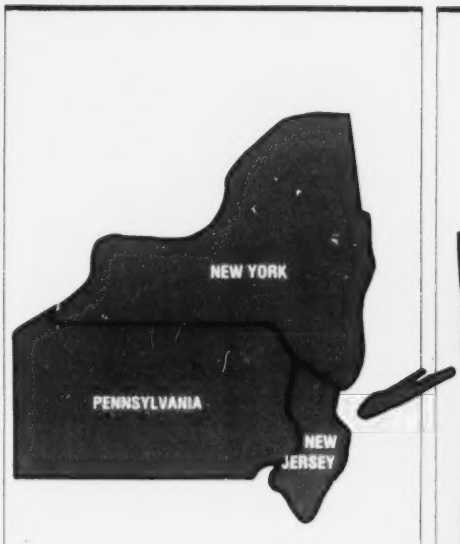
Major Equipment

Folding carton plants	69
Cutters & creasers	295
Letterpress printing presses	60
Offset printing presses	213
Offset: up to 3 colors	35
Offset: over 3 colors	41
Offset: up to 60"	46
Offset: over 60"	7
Dry offset or letterset	10
Flexographic printing presses	32
Gravure printing presses	21
Gluers, timed	121
Gluers, untimed	126
Waxers & waxing attachments	60
Laminators	12
Sheet cutters, guillotine	53
Sheeters, web fed	36
Corr. boxmaking equipment	6
Case sealers	35
Computers	16

Estimated Expenditures

Specialty papers	$4,998,006
Ink	9,795,240
Waxes & coatings	3,502,356
Corrugated containers	5,839,626
Die materials	2,157,792
Press plates, print supplies	10,448,256
Adhesives	2,846,298
Embossing foils	1,464,216
Tapes	342,732
Maintenance materials	6,820,398

Middle Atlantic



Major Equipment

Folding carton plants	126
Cutters & creasers	632
Letterpress printing presses	243
Offset printing presses	519
Offset: up to 3 colors	68
Offset: over 3 colors	99
Offset: up to 60"	107
Offset: over 60"	36
Dry offset or letterset	49
Flexographic printing presses	31
Gravure printing presses	35
Gluers, timed	196
Gluers, untimed	296
Waxers & waxing attachments	81
Laminators	30
Sheet cutters, guillotine	122
Sheeters, web fed	34
Corr. boxmaking equipment	10
Case sealers	55
Computers	27

Estimated Expenditures

Specialty papers	$18,627,180
Ink	36,499,944
Waxes & coatings	4,461,600
Corrugated containers	21,760,440
Die materials	6,943,872
Press plates, print supplies	38,937,600
Adhesives	7,757,100
Embossing foils	5,455,320
Tapes	1,276,626
Maintenance materials	25,532,520

New England

Major Equipment

Folding carton plants	55
Cutters & creasers	265
Letterpress printing presses	99
Offset printing presses	168
Offset: up to 3 colors	22
Offset: over 3 colors	31
Offset: up to 60"	35
Offset: over 60"	13
Dry offset or letterset	16
Flexographic printing presses	9
Gravure printing presses	2
Gluers, timed	60
Gluers, untimed	105
Waxers & waxing attachments	25
Laminators	15
Sheet cutters, guillotine	43
Sheeters, web fed	20
Corr. boxmaking equipment	5
Case sealers	19
Computers	12

Estimated Expenditures

Specialty papers	$6,743,100
Ink	10,829,520
Waxes & coatings	1,411,488
Corrugated containers	82,641,000
Die materials	2,702,310
Press plates, print supplies	2,697,240
Adhesives	2,602,938
Embossing foils	1,617,330
Tapes	378,222
Maintenance materials	7,574,279

spare time; the latter lack energy. For them, the appeal of stick-it-in-the-microwave-and-throw-away-the-box is likely to offer market prospects greater than their numerical increase. This younger group is not to be confused with the coke-and-pizza set, nor are these seniors those who require nursing service. Both sectors have reasonably refined adult tastes, and an appreciation of variety. This, together with their smaller-portion proclivity, spells a worthwhile potential for volume and diversity of the needed retail boxes.

Health concerns

Another trend conducive to packaging prosperity is the "health" preoccupation already

East North Central

Major Equipment

Folding carton plants	139
Cutters & creasers	612
Letterpress printing presses	212
Offset printing presses	521
Offset: up to 3 colors	79
Offset: over 3 colors	95
Offset: up to 60"	105
Offset: over 60"	49
Dry offset or letterset	17
Flexographic printing presses	57
Gravure printing presses	51
Gluers, timed	167
Gluers, untimed	282
Waxers & waxing attachments	73
Laminators	44
Sheet cutters, guillotine	112
Sheet cutters, web fed	60
Corr. boxmaking equipment	17
Case sealers	70
Computers	37

Estimated Expenditures

Specialty papers	$17,104,152
Ink	33,516,756
Waxes & coatings	5,124,756
Corrugated containers	19,266,000
Die materials	5,957,250
Press plates, print supplies	35,753,640
Adhesives	6,731,946
Embossing foils	5,009,160
Tapes	1,172,184
Maintenance materials	23,322,000

West North Central

Major Equipment

Folding carton plants	57
Cutters & creasers	202
Letterpress printing presses	40
Offset printing presses	159
Offset: up to 3 colors	30
Offset: over 3 colors	25
Offset: up to 60"	32
Offset: over 60"	10
Dry offset or letterset	0
Flexographic printing presses	27
Gravure printing presses	5
Gluers, timed	42
Gluers, untimed	82
Waxers & waxing attachments	20
Laminators	8
Sheet cutters, guillotine	40
Sheeters, web fed	21
Corr. boxmaking equipment	8
Case sealers	20
Computers	14

Estimated Expenditures

Specialty papers	$5,701,722
Ink	11,172,252
Waxes & coatings	1,920,516
Corrugated containers	6,659,952
Die materials	2,092,896
Press plates, print supplies	11,918,556
Adhesives	2,171,988
Embossing foils	1,669,040
Tapes	390,390
Maintenance materials	7,814,898

East South Central

Major Equipment

Folding carton plants	28
Cutters & creasers	84
Letterpress printing presses	12
Offset printing presses	66
Offset: up to 3 colors	7
Offset: over 3 colors	10
Offset: up to 60"	17
Offset: over 60"	1
Dry offset or letterset	0
Flexographic printing presses	14
Gravure printing presses	5
Gluers, timed	42
Gluers, untimed	43
Waxers & waxing attachments	7
Laminators	2
Sheet cutters, guillotine	12
Sheeters, web fed	14
Corr. boxmaking equipment	4
Case sealers	5
Computers	7

Estimated Expenditures

Specialty papers	$2,674,932
Ink	5,241,366
Waxes & coatings	564,798
Corrugated containers	3,125,148
Die materials	783,900
Press plates, print supplies	1,432,210
Adhesives	1,227,954
Embossing foils	783,822
Tapes	183,534
Maintenance materials	3,666,624

being strongly publicized and promoted. Some of this publicity borders on an exploitative jargon, such as the caffeine-free claim for foods that never contained it, and the sugar-free status attained at the expense of innocent glucose by substituting possible carcinogens. However, much of the widening concern with improved nourishment and controlled diet is legitimate and laudible.

Professional projections have been made that the field of specialized diet offers an inviting, high-volume outlet to food manufacturers (and, thus, to packagers). It is pointed out that significant segments, not limited to older groups, share one or another common physical state that is controlled by

West South Central

Major Equipment

Folding carton plants	27
Cutters & creasers	105
Letterpress printing presses	22
Offset printing presses	69
Offset: up to 3 colors	7
Offset: over 3 colors	14
Offset: up to 60"	16
Offset: over 60"	2
Dry offset or letterset	1
Flexographic printing presses	18
Gravure printing presses	5
Gluers, timed	36
Gluers, untimed	45
Waxers & waxing attachments	12
Laminators	1
Sheet cutters, guillotine	12
Sheeters, web fed	11
Corr. boxmaking equipment	3
Case sealers	14
Computers	5

Estimated Expenditures

Specialty papers	$2,498,496
Ink	4,897,620
Waxes & coatings	903,474
Corrugated containers	2,919,306
Die materials	1,236,066
Press plates, print supplies	5,224,128
Adhesives	1,213,758
Embossing foils	732,108
Tapes	171,366
Maintenance materials	3,425,292

Mountain

Major Equipment

Folding carton plants	7
Cutters & creasers	40
Letterpress printing presses	8
Offset printing presses	44
Offset: up to 3 colors	11
Offset: over 3 colors	3
Offset: up to 60"	11
Offset: over 60"	0
Dry offset or letterset	0
Flexographic printing presses	0
Gravure printing presses	0
Gluers, timed	9
Gluers, untimed	12
Waxers & waxing attachments	2
Laminators	1
Sheet cutters, guillotine	12
Sheeters, web fed	7
Corr. boxmaking equipment	0
Case sealers	1
Computers	3

Estimated Expenditures

Specialty papers	$800,046
Ink	1,568,658
Waxes & coatings	0
Corrugated containers	934,908
Die materials	249,444
Press plates, print supplies	1,673,000
Adhesives	269,724
Embossing foils	234,234
Tapes	54,756
Maintenance materials	1,097,148

Pacific

Major Equipment

Folding carton plants	58
Cutters & creasers	246
Letterpress printing presses	56
Offset printing presses	254
Offset: up to 3 colors	41
Offset: over 3 colors	50
Offset: up to 60"	51
Offset: over 60"	22
Dry offset or letterset	11
Flexographic printing presses	32
Gravure printing presses	10
Gluers, timed	100
Gluers, untimed	121
Waxers & waxing attachments	50
Laminators	15
Sheet cutters, guillotine	65
Sheeters, web fed	34
Corr. boxmaking equipment	4
Case sealers	46
Computers	23

Estimated Expenditures

Specialty papers	$47,165,938
Ink	14,041,872
Waxes & coatings	3,106,896
Corrugated containers	8,371,584
Die materials	2,720,562
Press plates, print supplies	14,978,08
Adhesives	3,224,520
Embossing foils	2,097,966
Tapes	490,776
Maintenance materials	9,821,604

dietary selection. This control may call for the assured presence, or absence, of some specific factor in food. That need not entail a dull diet of some flabby gruel derivative. Trained dieticians can formulate extensive varieties of tasty, inviting foods that meet most of these individual needs.

It is expected by marketers and medicals that this potential will be sought and developed by foodmakers, much as the ancient alternates of vanilla/chocolate/strawberry in ice cream flavors were expanded into the present uncountable combinations, and as the original tomato soup became father to the famous "57 different varieties."

One more promising field for box

innovation is the "tamper-evident" (as distinct from unattainable tamper-*proof*) packaging. Sober, knowledgeable social experts believe that the need for this safeguard will grow, as our social pressures and divisive resentments grow, with our crowding population. It is seen that the need will not be limited to the likes of optional headache remedies, but will extend to our everyday foodstuffs and other necessities, exposed unguarded in retail outlets and in transport.

These are some of the now-visible areas for carton innovation, within the present capabilities of the basic paperboard box. To be noted, again, is that the daily consumption of just one additional folding carton by each of this country's people would call for the production of 65,000 added boxes per minute, every minute of every day. It remains to see the need, and sell the cartons.

End-Use Survey of Rigid Box Industry Sales

(Millions)	1974	1975	1976	1977	1978	1979	1980	1981	1982
	(Percent)								
Textiles Apparel & Hosiery	4.9	7.5	3.7	4.8	7.3	4.5	4.4	5.5	3.3
Dept. Stores & Specialty Shops	10.1	9.9	10.7	10.6	10.1	8.3	6.8	7.1	5.6
Cosmetics & Soaps	3.9	1.8	5.3	5.1	3.3	4.3	5.5	3.9	1.4
Confections	9.8	13.3	10.5	8.1	9.0	15.7	12.6	18.0	16.6
Stationery & Office Supplies	10.4	9.7	12.5	13.2	11.8	15.0	13.5	9.3	17.1
Jewelry & Silverware	8.6	5.2	4.2	14.0	10.7	7.6	9.3	9.7	10.0
Photographic Products & Supplies	3.2	2.2	2.4	2.7	3.0	3.5	4.5	4.3	4.5
Shoes & Leather	7.5	4.8	1.3	1.1	3.7	0.4	0.3	0.2	0.3
Drugs, Chemicals & Pharmaceuticals	7.8	6.9	9.3	7.3	4.9	13.1	7.5	7.8	6.3
Toys & Games	1.1	2.3	3.3	2.6	2.1	1.4	1.4	1.8	2.9
Hardware & Household Supplies	7.7	7.0	6.4	6.2	5.4	3.4	5.5	4.0	7.5
Food & Beverages	1.2	2.9	3.6	0.3	2.9	5.4	4.3	3.9	1.4
Sporting Goods	1.4	1.9	0.7	1.0	1.2	1.7	1.2	1.2	0.4
Other Major Customers (A)									
(a) Electronics	2.3	3.4	4.2	2.6	2.9	4.3	2.6	3.5	3.9
(b) Educational	4.8	3.9	3.9	6.5	5.2	3.8	3.7	4.4	2.7
(c) Other	10.5	12.2	12.2	7.1	10.7	1.1	8.4	7.0	7.8
Misc. Customers	4.8	5.1	12.4	6.8	5.8	6.5	7.5	8.4	8.3
	100%	100%	100%	100%	100%	100%	100%	100%	100%

Rigid Box Industry Is In Mature Phase

Survivers of this tightened market are innovative specialists who have learned to be more efficient.

Industry data and the opinions of plant owners who comprise the rigid paper box industry give statistical and verbal testimony to the fact that it is not growing. It is in the mature phase of its life cycle.

The rigid box has been in America since 1842. Growth in sales continued upward for 75 years, at which time folding cartons evolved as an alternate paperboard package. Both package forms continued growing until the 1950s along with the broad ever-expanding demand for packaging. Rigid box volume, however, expanded at a declining growth rate.

After 1950, the impact of other package forms on rigid box markets accelerated. Nevertheless, the industry dollar volume has continued to expand at the average rate of 4% yearly, while the number of producing plants declined from 850 in 1955 to 454 in 1967 to 318 in 1977, and as of 1983, there are fewer than 200 manufacturers who employ 20 or more workers. Three out of four "survivors" hold membership in the National Paperbox & Packaging Association, permitting us to obtain from 20 companies personal appraisal for the industry this year and for five years down the road.

To survive in the rigid box business, a manufacturer must manage his company aggressively, and concentrate on expanding his sales. Primarily, this is achieved by buying out other producers, diversifying, or both. Nearly half of America's RPB producers make other package forms besides rigid boxes—folding, formed plastics, corrugated, etc.

To survive in the rigid box business, a manufacturer must manage his company aggressively . . .

There is continuing growth in RPB industry dollar sales volume, from $259 million in 1967 to $528 million in 1983. While dollar sales almost doubled, however, the production volume dropped 35%. Thus, the production index of 100 in 1967 had fallen to 65 at the end of 1982 after allowance was made for inflation.

End-use markets for rigid boxes shift over the years, as can be seen from the table.

Textiles and department store boxes, which used to be predominantly rigid box markets, appear to represent declining shares of the total market. The largest end-uses are confections, stationery and office supplies, and jewelry or silverware.

Industry of niches

According to Leigh Stein, C.O.B., Design Pak, Inc.: "Our product has had perhaps the longest life cycle for any article manufactured in the U.S. Just when the industry is being demolished by segments of the economy moving to a different form of packaging, a new requirement for set-up boxes supports an otherwise dismal outlook. Ours has become an industry of niches. The quality of our rigid box is often sought after for a more expensive product, such as writing instruments, jewelry and miniature or smaller cameras, etc."

The following end-uses are seen by manufacturers as areas where RPB sales will increase and decrease.

End-uses which will increase:

- Confections, educational training kits, storage boxes, computer supply boxes.
- New products in electronic and entertainment fields.
- Top-line point-of-purchase products, executive mail order items, sales promotional items.

Rigid box quality and reusability continue to make it a preferred package.

- Quality packages and combination rigid with other package forms.
- Higher-priced department stores seeking to upgrade image. Confections in $17 to $25 range.
- Slip cases for computer software.

End-uses which will decrease:

- Department store and textiles.
- Expensive jewelry boxes and cosmetics.

On balance, rigid boxmakers are cautiously optimistic. As one boxmaker put it, "We survivors have learned to be more efficient. We are actually innovative specialists in packaging who sell quality rigid boxes, which will command a larger share of the packaging market."

Several manufacturers also believe modest growth over the next five years will come from making expensive packages for delivery over greater distances.

From the standpoint of individual companies who are projecting growth over the next five years, diversification, acquisitions and increased sales of allied products will be the driving force with rigid boxes making a positive, but proportionately smaller, contribution to overall company growth.

The consensus is that 1984 will show a 5% dollar increase in industry sales over 1983 and remain constant in units sold. Looking ahead to 1988, growth of 4-8% is expected for industry sales in constant dollars. As one industry expert put it, "If the economy is strong, we will be strong and expand."

Rigid box quality and reusability continue to make it a preferred package.

Converters Are Finally Starting To Sign Checks

Paperboard Packaging's first Equipment Purchasing Plans Survey focuses on specifics.

For the first time, *Paperboard Packaging* has conducted a survey of corrugated container and folding box plants throughout the country to find out exactly what they plan to spend on equipment this year and what they think about their machinery in general. The response rate for this survey—conducted in October by Infometrics National Research Center, Duluth, Minn., a service of Harcourt Brace Jovanovich Publications, Inc.—was very good: 16% for corrugated, 17% for folding carton. As opposed to stating here various percentages and possible conclusions that can be drawn from them, we'll let the accompanying eight tables do all the talking and let the reader draw

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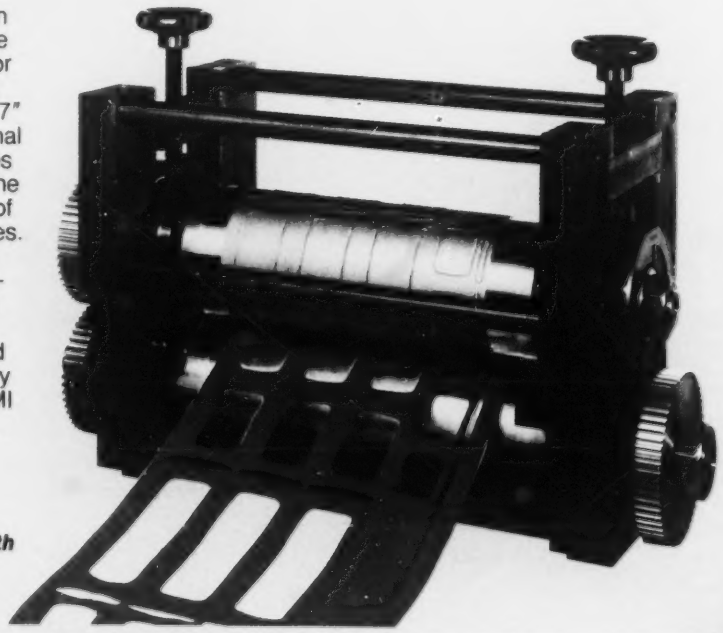

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Table 1 - Planned 1984 Machinery Expenditures

	Corrugating & Sheet Plants	Folding Carton Plants
Nothing	15%	43%
Up to $250,000	48	38
$250,000-$500,000	16	6
$500,000-$1 M	15	2
Over $1 M	7	6
Didn't Specify	-	4

Table 2 - 1984 Machinery Expenditure Plans Compared to 1983

	Corrugating & Sheet Plants	Folding Carton Plants
More than 1983	45%	38%
Same as 1983	18	26
Less than 1983	32	36
Didn't Specify	5	-

Table 3 - 1984 Plans to Purchase New Equipment

	Corrugating & Sheet Plants	Folding Carton Plants
Nothing	29%	47%
Up to $250,000	47	36
$250,000-$500,000	10	9
$500,000-$1 M	10	2
Over $1 M	5	6

Table 4 - 1984 Plans to Replace Existing Equipment

	Corrugating & Sheet Plants	Folding Carton Plants
Nothing	55%	54%
Up to $250,000	29	38
$250,000-$500,000	7	2
$500,000-$1 M	3	-
Over $1 M	5	6
Didn't Specify	2	-

his or her own conclusions. In sum, though, the overall picture is encouraging.

The most pleasant surprise of all was the number of corrugators sold in 1983. The definition of "corrugators sold" is ones that are brand-new (not retrofits) but not necessarily *installed* in plants yet. Ten of these were counted. The questions one must pose are whether this figure is the sole result of pent-up demand, and whether this many are going to be sold every year. After talking to a number of key executives on this matter, it can be concluded that three or four corrugators are going to be sold each year simply because the plant's current corrugator is too old to meet today's production demands. Although there is not a whole lot of expansion to begin with, one executive pointed out that this industry is "trying to catch up" in state-of-the-art technology, and, with funds "in the freezer" for the past few years, it was a matter of spending or dying a slow death. Will another 10 (or more) corrugators be sold this year? The chances are very good.

With regards to other machinery: based on our survey results, finishing equipment (flexo folder-gluers, folder-gluers, diecutters) has a very bright future.

Financing equipment

"We've seen a dramatic upturn in business since last summer," says an executive of a financing and leasing company. "As long as interest rates remain stable, the good news will continue. Right now we're in the middle of climbing a hill and the end is not in sight. A lot of plants are turning away from the plain brown box and concentrating on the value-added aspect. This means they'll be looking for equipment that will give that to them. People are buying."

Used-equipment dealers did well last year (up an average of 22% over 1982) and at least one is increasing its capacity "in preparation for the best year in the company's history."

Finally, an astute (but sadly true) observation was made by one industry veteran when he pointed out that there are "no new Wards." What did he mean?

"More and more of the corrugated container industry's suppliers of large

Table 5 - 1984 Plans to Improve Existing Equipment

	Corrugating & Sheet Plants	Folding Carton Plants
Nothing	39%	34%
Up to $250,000	42	64
$250,000-$500,000	8	4
$500,000-$1 M	3	-
Over $1 M	5	2
Didn't Specify	3	2

Table 6 - 1984 Corrugating and Sheet Plant Equipment Purchase Plans

Splicer	13%
Fingerless Single Facer	11
Printer-Slotter	16
Folder-Gluer	14
Flexo Folder-Gluer	23
Cutoff Knife	13
Downstacker	13
Rotary Diecutter	27
Flat-Bed Diecutter	13
Laminator	11
None	16
Didn't Specify	13

Table 7 - 1894 Folding Carton Plant Equipment Purchase Plans

Rotary Diecutter	2%
Flat-Bed Diecutter	6
Flexographic Press	4
Offset (Litho) Press	21
Gravure Press	2
Letterpress	4
Folder-Gluer	26
Laminator	4
None	54

(continued on page 52)

For more information on International Paper Box Machine Co., Circle No. 127 on Reader Inquiry Card.

equipment are foreign manufacturers," he laments. "There are no new American manufacturers and some of the major companies have lost some capabilities. 1983 may have been the year American equipment fell behind European and Japanese equipment. I hate to say that but it could be true." He concluded that today the cost of starting up a new company is so astronomical that he "can't see the possibility of any new (American) companies entering the field." It is not the first time these sentiments have been expressed. Still, there is no doubt that in the paperboard converting industry today "buying American"-and getting the best equipment can no longer *automatically* be taken for granted.

Table 8 - Significant Machinery Problems

(According to ALL respondents—corrugating, sheet plants, and folding carton plants)

	Major Problem	Somewhat of a Problem	Not Much of a Problem	No Problem	Didn't Specify
Insufficient Speed	15%	30%	31%	22%	1%
Lack of Flexibility & Versatility	8	28	34	29	1
Availability of Spare Parts	9	29	34	29	-
Energy/Power Consumption	5	29	32	32	2
Vendor Service	6	24	31	38	1
Cost	39	39	11	11	-
Quality of Construction	4	27	33	35	1

Canadian Outlook For 1984

Canadian Corrugated Market Recovers From '83 Strike

by Frank Rook
Executive Director
Canadian Corrugated Case Association

The Canadian economy is closely linked to the United States economy. During a business cycle, Canada seems to lag in both downturn and upturn. Demand for corrugated containers follows this pattern.

1982 was particularly disastrous for the industry. Not only was there declining demand, but 45% of eastern Canada's corrugated capacity was out of production for six months because of a strike. Not unexpectedly, consumers had to turn to the U.S. to augment supply from the idle Canadian plants. Even after the strike, consumers continued to import larger-than-normal volumes from U.S. suppliers. Imports into Canada, particularly into the eastern region, have been running 60% higher than the pre-strike norm. This reflects the advantages U.S. plants enjoy—lower paperboard costs and markedly lower wages.

1983 demand will likely end up 5-6% higher than in 1982, much of the increase filled by imports from the U.S.

F. D'Arcy Quinn

Many Canadian forecasts are expecting an increase in 1984 GNP of 3.5%. This will result in a buoyant demand for containers.

Shipments will likely be up by another 5-6% in 1984, bringing them to a level slightly below 1981.

Supply should be no problem in 1984.

Costs continue to inch up, despite improved cost controls such as retrenchment and improved productivity. Paperboard remains the dominant cost factor, and increases in board costs are quickly reflected in container selling prices.

I look for an increase in container prices early in the third quarter of 1984.

In short, 1984 will be a good year, with adequate supply and marginally increased selling prices.

For the first time in the January Buying Forecast, Paperboard Packaging is devoting a full section to the Canadian industry, including articles by prominent members of that field.

Corrugated Production Improvement Due to Rise

by F. D'Arcy Quinn
Vice President/General Manager
Packaging Business
CIP Inc.

The consumption for containerboard/corrugated containers in Eastern Canada in 1983 is difficult to determine. Most of the large end-users had to run down inventories built up during the latter part of 1982 to protect themselves from a strike that closed down 60% of corrugated container converting

capacity during the second half of last year.

The demand for containers remained very weak until well into the second quarter of 1983, and it wasn't until the third quarter that most of the industry started to enjoy pre-strike volume. These factors make it hard to determine the change in year-over-year demand for containerboard/corrugated containers. However, we estimate that the Eastern Canadian market improved by some 2.5%, to 934,000 tons last year.

The overall improvement experienced in the Canadian economy, especially during the second half, is expected to continue through 1984. We estimate that real GNP in Canada will grow by 5% this year. This should result in a 4% increase of containerboard/corrugated containers with the total demand for Eastern Canada estimated at 971,000 tons. Increased demand is expected to occur in almost all major end-use markets, especially furniture, white goods and brewery segments (as some breweries move away from re-trippers to single trip containers). Because of poor crops in tomatoes, corn and peas last year, most canners should have minimum carry-overs, which should result in greater corrugated demand, 1984 crops permitting. There are strong indications that containers produced from preprinted linerboard will begin to penetrate the Canadian market in 1984. While some segments of the brewing industry have begun to use preprinted containers with superior graphic presentation to create a stronger image for certain brands, the demand for this type of corrugated will be expanded into other markets such as small appliances, giftwares, and toys.

The Canadian corrugated industry continues to experience consolidation within its ranks through acquisitions and/or mergers. Several plant closures have already been announced with others likely to follow as companies rationalize their converting facilities in an effort to become profitable. This is a result of container manufacturers suffering a cost-price squeeze. Higher costs of raw materials, labor, finishing materials, freight, etc., have more than offset the revenue derived from price increases of corrugated containers. While improvement in productivity will help reduce some of this shortfall, further price adjustments will be required if the industry is to remain viable.

Total Canada

Major Equipment

Corrugating plants	55
Sheet plants	13
Corrugators	63
Independent single facers	6
Letterpress printer-slotters	118
Flexo printer-slotters	42
Flexo folder-gluers	115
Folder-gluers	38
Infold gluers	14
Tapers & folder tapers	125
Stitchers & folder stitchers	94
Diecutters, platen jaw	21
Diecutters, flat bed reciprocating	39
Diecutter stations, rotary	53
Wax impregnators, corr. coaters	60
Curtain coaters	21
Laminators	13
Unitizers & load strappers	57
Bundle tyers	119
Computers	21

Moderate Recovery Will Continue In Folding Cartons

by Robert F. Krause
President
Somerville Belkin Industries Ltd.

The Canadian economy is experiencing a moderate recovery, which will probably continue. No sharp upward curve in the pace of this upswing, however, is expected. The strength of the recovery in Canada is not as pronounced as what we perceive is taking place in the U.S.

The recession caused high unemployment, permanent idling of many plants and drastic reductions in business profits in Canada. The base from which Canada must move is weaker than that of the U.S. but is still solid. In the Canadian folding carton industry, we look for minimal growth in 1984 vis-a-vis 1983. A 1½-2% growth in real terms would be maximum.

1983 presented a year in which volume levels were rather strong in spite of minimum inventory positions being maintained at the customer level. The profit squeeze continued in 1983 because of overcapacity in the industry and market resistance to the pass-through of cost increases. This condition will no doubt prevail in 1984 as well.

Recent labor negotiations have produced more reasonable contract settlements, and the restoration of more normal inventory levels will provide a production boost. This provides a basis for cautious optimism.

New products in paperboard that replace non-paperboard packaging applications are aseptic packaging for juices and ovenable board for food products once presented in aluminum foil trays. Aseptic packaging for juices should proliferate rapidly in the individual 200- and 250-ml size packages.

The ongoing demand for convenience packaging encourages the introduction of folding cartons manufactured from ovenable board. Cartons made from this material and then filled with various food combinations have the unique ability to be reheated in conventional or microwave ovens. There is an extensive potential for this process in central commissary feeding establishments such as hospitals and schools.

On a pessimistic note, the tobacco industry will no longer enjoy above-average annual growth. The health hazard scare and excessive government taxation have combined to not only inhibit usage but to actually reduce the consumption of cigarettes in real terms. Expectations are for the decline to continue.

In summary, 1984 will resemble 1983 in many ways with little significant growth, a continuation of the overcapacity condition and the cost/price squeeze adversely affecting profits but, we hope, presenting enough opportunities that the industry will emerge in a stronger position at the end of 1984.

Canadian Folding Carton Markets Follow U.S. Trends

by Marcel J. Pilon
Vice President
Packaging Division
Lawson & Jones Ltd.

Many articles have been written on depressed folding carton markets in general. The Canadian market follows very closely the trends taking place in the United States.

The demand for folding cartons is highly correlated to consumer

spending on non-durable items, which in 1983 was much improved over 1982. The Canadian GNP indicates a healthy recovery over the past nine months and, similarly, the carton industry follows with real growth of about 5% over 1982—a figure we get after using the boxboard price index as a price deflator.

Single-portion packs have not made a major penetration of the food markets . . .

According to a Business Trends Analysts report on the U.S. paperboard box market, the real growth for folding cartons over the next decade is expected to be 1.5%, and, as mentioned earlier, Canada is expected to follow a similar evolution.

The folding carton converter must monitor very closely the market segments he best serves in order to predict his eventual growth. A great number of changes is taking place. Aseptic packaging, which was slow in making its presence felt in the marketplace, is now suddenly being heavily promoted by a great number of juice and wine companies. The more luxury-oriented products (confectionery and cosmetics) are only now recovering from recessionary losses. Fast foods retain strong potential despite a major slowdown. Tobacco and distillery products continue to show declines due to increasing tax legislation intended to reduce health hazards.

Although the number of single-person households is climbing, Canadians are still generally oriented towards large-family and economical sizes. Single-portion packs have not made a major penetration of the food markets, as can be seen in Japan and Europe.

Overall, the Canadian folding carton market continues to be operating with overcapacity. The resulting low margins make it very difficult for any converter to make any appreciable gain in market share without further reducing returns to a level which will make it impossible to upgrade or replace equipment. As in the United States, further consolidation of the industry is expected, and greater market segmentation will be required for converters to survive in a more price-sensitive packaging market that is shrinking over the long term. The folding carton converter will have to become more innovative and more aware of the emerging packaging needs of the end-user in order to compete against other potential packaging vehicles.

Canadian Folding Cartons Climb Slowly From Recessionary Valley

C. Kenneth Clements
President and General Manager
Telfer Packaing Ltd.

The folding carton industry in Canada had total sales in 1982 of $578 million, covering all folding, set-up and milk containers as well as goods imported from the U.S. This was a 5.5% increase from the previous year, but with a negative real growth factor. 1983 looks a little

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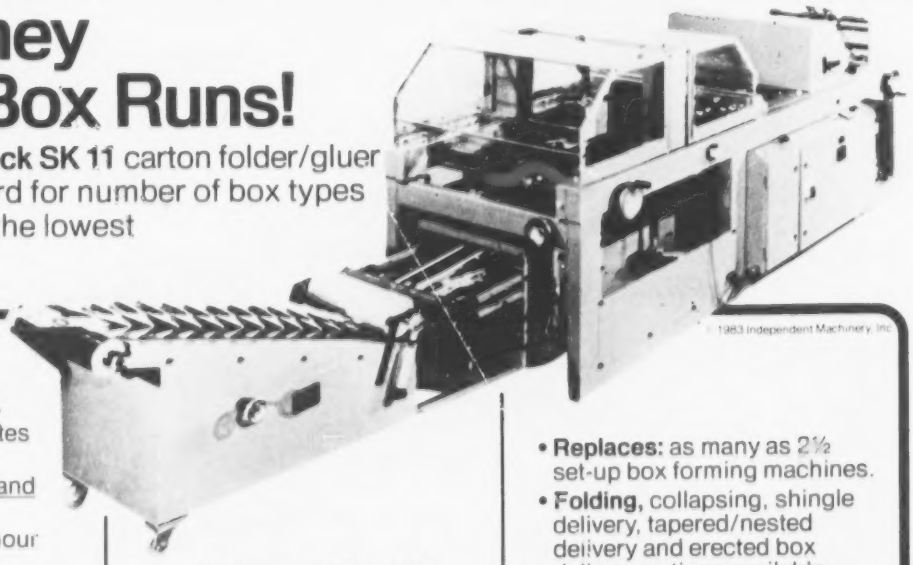

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Total Canada

more promising, and the industry should finish with sales of $638 million (1% real growth and 10.4% total sales increase).

If current sales develop, as well as cost and market trends, 1984 should see a 12% increase. Unfortunately, the real growth factor will probably remain at about 1%.

The number of folding carton and set-up manufacturers in Canada has remained consistent at about 110, the majority located in Ontario. Of these, eight companies dominate the industry and compete for an ever-diminishing piece of the pie. With after-tax return on sales averaging about 3% and some operations losing money, the Canadian folding carton industry must expand its horizon. This expansion should come in two forms.

The first involves innovation. In past years, we have seen wine, milk and non-carbonated beverages in folding cartons. Our industry must now look at a broad packaging market to achieve prospective volume. We must leave our narrow mold and broaden our base. Research and development has been neglected here for many years, and we visualize considerable expenditures in this area to help us keep pace.

The second growth area will come in the form of exports to the United States. This huge market has, for some unknown reason, been virtually ignored by Canadian converters. It is now seen by many of us here in Canada as a route to new volume, fuller utilization of our production overcapacity, and marketing of our considerable expertise and quality in a receptive U.S. market. Add to this duty remissions on board and favorable exchange rates, and our warning is: "Let the American converters beware."

The Canadian economy is lagging behind the U.S., and although things are marginally better now, we are still in a recessionary phase. In our opinion, it will be late 1984 before the picture brightens.

In order to not merely survive but to grow, the folding carton industry in Canada must improve its technology. Capital expansion has been virtually nil during the recession, and we are the worse for this fact in Canada. We must avail ourselves of the latest gravure technology, high-speed computerized offset equipment, platen diecutters and blankets, computerized gluers and automatic case packers. We have the people and the know-how, and we are investing in our facilities. When we emerge from this valley, the sky is the limit. □

Major Equipment

Folding carton plants	87
Cutters & creasers	370
Letterpress printing presses	155
Offset printing presses	375
Offset: up to 3 colors	71
Offset: over 3 colors	55
Offset: up to 60"	86
Offset: over 60"	14
Dry offset or letterset	5
Flexographic printing presses	25
Gravure printing presses	14
Gluers, timed	90
Gluers, untimed	116
Waxers & waxing attachments	45
Laminators	9
Sheet cutters, guillotine	78
Sheeters, web fed	13
Corr. boxmaking equipment	3
Case sealers	19
Computers	16

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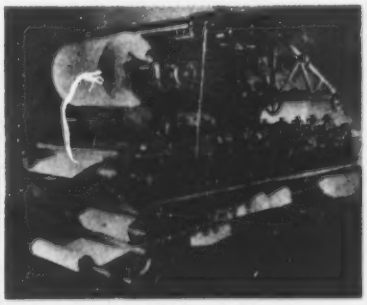

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